

## **ABSTRACT**

A map of site-specific amounts of a soil nutrient, to be applied in fertilizer to an agricultural field is created using a map of site-specific amounts of the soil nutrient needed to produce the maximum possible yield at the particular site. Subtracted from the site-specific amounts of nutrient needed are site-specific amounts of the nutrient currently existing in the field, thus producing the map of site-specific nutrient amounts to be added. The nutrient amounts may be added to the soil using the map and conventional variable-rate fertilizer application methods. In one embodiment, the amounts of the soil nutrient needed to produce the maximum possible yield at each site is created using a map of site-specific measures of biomass produced by the field in a past growing season or seasons, which in turn is created from a remotely sensed biomass image.

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